

[0001] The invention relates to a golf device,  
particularly a training device for the game of golf,  
5 which reduces the frictional force and allows a  
frictionless shot.

[0002] A golf device in respect of which a patent  
has already been applied for by the same inventor is  
10 shown in Figure 1. This golf device is indeed of  
very high quality, but it still has the following  
disadvantages:

1. Since the frictional force is great, the golf  
15 ball cannot rotate without friction after the shot,  
so that the detected signal is not exact.

2. The shot leads to wear of the components, so  
that the service life is shortened.

20 [0003] The object of the invention, therefore, is to  
create a golf device which reduces the frictional  
force and allows a frictionless rotate.

25 [0004] This object is achieved according to the  
invention by the features of Claim 1. Advantageous  
embodiments are described in the further claims.

[0005] According to the invention it is provided  
30 that the striking device comprises a dish-shaped  
housing with a rim which is provided with a  
plurality of holes for screws by which the housing  
can be fixed on the artificial green and the rubber  
underlay. In this case the housing has at its

vertex an opening which is surrounded on the inside by a bearing bushing in which a horizontal bearing is received, whereby a shaft passes through the opening and is connected to a rotary disc which is provided with spaced light shields and below which is provided a vertical bearing which is received in a bearing bushing on the base. By rotation of the rotary disc the sensor detects a signal which is sent via a signal transmission line to the display device. Above the housing is provided a ball bearing which is received in a bearing box and a base and is connected via a bar to a golf ball. A screw around which a spring is placed is pushed from below into the shaft, the end of the spring projecting out of the bearing box, and is secured by a nut so that the bearing box is fixed rotatably on the housing.

[0006] The invention is described in greater detail below with reference to the accompanying drawings, in which:

Figure 1 shows a perspective view of the conventional device,  
Figure 2 shows an exploded view of the striking device according to the invention,  
Figure 3 shows a perspective view of the invention,  
Figure 4 shows a sectional view of the striking device according to the invention,  
Figure 5 shows a representation of the vertical movement of the golf ball,  
Figure 6 shows a representation of the horizontal turning of the golf ball,

Figure 7 shows a sectional view of the horizontal bearing,

Figure 8 shows a sectional view of the vertical bearing,

5 Figure 9 shows a view of the invention in use,

Figure 10 shows a circuit diagram of the invention.

[0007] As can be seen from Figures 2 to 4, the invention essentially consists of a rubber underlay  
10 (10), an artificial green (20), a plastic plate (30), a display device (40), a starter (50) and a striking device (60).

[0008] The rubber underlay (10) is disc-shaped and  
15 is provided with a carrying handle (11).

[0009] The artificial green (20) lies on the rubber underlay (10).

20 [0010] The plastic plate (30) is fixed on one side of the rubber underlay (10) by means of screws (31).

[0011] The display device (40) and the starter (50) are disposed on the plastic plate (30).

25 [0012] The striking device (60) is provided at a suitable location on the artificial green (20) and rubber underlay (10), whereby the striking device (60) comprises a dish-shaped housing (61) with a rim  
30 which is provided with a plurality of holes (62) for screws (63) by which the housing (61) can be fixed on the artificial green (20) and the rubber underlay (10), whereby the housing (61) has at its vertex an

opening (64) which is surrounded on the inside by a bearing bushing (65) in which a horizontal bearing (66) is received, a shaft (67) passes through the opening (64) and is connected to a rotary disc (68) which is provided with spaced light shields (69) and below which is provided a vertical bearing (72) which is received in a bearing bushing (75) on the base (74), and by rotation of the rotary disc a sensor detects a signal which is sent via a signal transmission line (71) to the display device (40).

[0013] Above the housing (61) is provided a ball bearing (78) which is received in a bearing box (76) and a base (77) and is connected via a bar (79) to a golf ball (80), whereby a screw (82) around which a spring (81) is placed is pushed from below into the shaft (67), the end of the screw projecting out of the bearing box (76) and being secured by a nut (83) so that the bearing box (76) is fixed rotatably on the housing (61).

[0014] During assembly, the horizontal bearing (66) is pressed into the bearing bushing (65) of the housing (61) and firmly clamped therein, so that the frictional force between the shaft (67) and the housing (61) is reduced when the shaft (67) rotates. The vertical bearing (72) below the rotary disc (68) is likewise firmly clamped in the bearing bushing (75) of the base (74), which also results in a reduction in the frictional force.

[0015] The horizontal and vertical bearings (66, 72) serve to ensure a frictionless rotation of the shaft

(67) when the golf ball (80) is struck and thus a horizontal or vertical vector force is produced, whereby the golf ball (80) can be turned horizontally by  $360^\circ$  and moved vertically by 0 to  $30^\circ$ , as Figures 5 to 8 show, and the sensor (70) detects a signal by rotation of the rotary disc (68).

[0016] In use, as Figure 9 shows, the user strikes the golf ball (80) with a club, so that the bar (79) and the ball bearing (78) are also moved, resulting in rotation of the bearing box (76) which entrains the shaft (67) and thus the rotary disc (68) in the housing (61). Since the rotary disc (68) is rotating, the light is interrupted intermittently by the light shields (69), as a result of which the sensor (70) detects a corresponding signal which is sent via the signal transmission line (71) to the display device (40) and is displayed there. Therefore the user can read off the results of the shots.

[0017] The display device (40) includes a microprocessor which can calculate the number of pulses received via the signal transmission line (71), so that the display device (40) can display information such as hole number, hole distance, number of shots, par, shot width, shot speed, shot direction, wind direction, wind speed, etc., so that a game of golf on an 18-hole golf course can be simulated.

[0018] The spring (81), which is placed around the screw (82) which is pushed from below into the shaft (67), projects out of the bearing box (76) and is secured by a nut (83), can produce a damping effect.

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[0019] Due to the facts mentioned above, the invention has the following advantages:

1. high damping effect,
- 10 2. low frictional force
3. long service life
4. possibility of displaying the results.

Claims

1. Golf device which consists of a rubber underlay (10), an artificial green (20), a plastic plate (30), a display device (40), a starter (50) and a striking device (60), characterised in that the rubber underlay (10) is disc-shaped and is provided with a carrying handle (11).
2. Golf device as claimed in Claim 1, characterised in that the artificial green (20) lies on the rubber underlay (10).
3. Golf device as claimed in Claim 1, characterised in that the plastic plate (30) is fixed on one side of the rubber underlay (10) by means of screws (31).
4. Golf device as claimed in Claim 1, characterised in that the display device (40) and the starter (50) are disposed on the plastic plate (30).
5. Golf device as claimed in Claim 1, characterised in that the striking device (60) is provided at a suitable location on the artificial green (20) and rubber underlay (10).
6. Golf device as claimed in Claim 1 or 5, characterised in that the striking device (60) comprises a dish-shaped housing (61) with a rim which is provided with a plurality of holes (62) for screws (63) by which the housing (61) can be fixed

on the artificial green (20) and the rubber underlay (10), whereby the housing (61) has at its vertex an opening (64) which is surrounded on the inside by a bearing bushing (65) in which a horizontal bearing (66) is received, a shaft (67) passes through the opening (64) and is connected to a rotary disc (68) which is provided with spaced light shields (69) and below which is provided a vertical bearing (72) which is received in a bearing bushing (75) on the base (74), and by rotation of the rotary disc a sensor detects a signal which is sent via a signal transmission line (71) to the display device (40).

7. Golf device as claimed in one of the preceding claims, characterised in that above the housing (61) is provided a ball bearing (78) which is received in a bearing box (76) and a base (77) and is connected via a bar (79) to a golf ball (80), whereby a screw (82) around which a spring (81) is placed is pushed from below into the shaft (67), the end of the screw projecting out of the bearing box (76) and being secured by a nut (83) so that the bearing box (76) is fixed rotatably on the housing (61).